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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/803,904	03/19/2004	Kyoichi Mori	KY-196	6708

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EXAMINER

JACKSON, TYRONE D

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 01/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/803,904	Applicant(s) MORI ET AL.	
	Examiner Tyrone Jackson	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8, 12-15, and 17-22 is/are rejected.
- 7) ☒ Claim(s) 7, 9-11 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>3/19/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 17, 19, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Zhang et al. {5,726,073}.

Zhang et al. discloses a head carriage having a XY stage supported by a surface plate reference base (third frame), comprising: a movable frame (second frame stage) movable on the reference base along one of an X axis and a Y axis, the movable frame having a rectangular space inside thereof; a first drive source provided in the reference base, for moving the movable frame; a rectangular movable base (first frame stage), that can support a magnetic head assembly or a magnetic head cartridge, mounted within the rectangular space of the rectangular movable frame, the rectangular movable base being movable on the reference base along the other of the X and Y axes and stopped on the reference base; and a second drive source provided in the movable frame, for moving the movable base (column 2 lines 34-63).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4, 12-14, 18, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. {5,726,073} in view of Green et al. {6,531,867}.

Regarding claims 2, 4, 12, 18, 20, and 22, Zhang et al. discloses the XY stage as described above but does not teach a fine elevation mechanism for floating the movable base. Green et al. does teach a fine elevation mechanism which comprises pressing means provided in the movable frame or the reference base, for pressing the movable base toward the reference base to make the movable base in contact with the surface of the reference base to thereby lock down the movable base on the surface of the reference base (column 3 lines 23-28), and a movable base floating mechanism for floating the movable base from the surface of the reference base against the pressing force of the pressing member, the movable base being moved while supported by the reference base through the bearings (column 3 lines 59-64).

Regarding claims 13 and 14, Green et al. discloses that the movable base floating mechanism is an air blow mechanism including a plurality of dispersed air blow orifices provided in the movable base or the reference base, for slightly floating the movable base by blowing air from the air blow orifices (column 4 lines 38-40). Green et al. also discloses a gap for relieving air blown from the air blow orifices when the air

blow from the air blow orifices of the movable base floating mechanism is stopped is provided between the movable base and the reference base (column 4 lines 45-59).

Regarding claims 8 and 15, Zhang et al. discloses a movable frame that is rectangular in plan view, a first bearing means provided on opposing two sides of the rectangular movable frame for supporting the movable base movably, a second bearing means is provided between the other opposing two sides of the movable frame and the reference base and the first and second drive sources are linear motors, respectively (column 2 lines 53-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the fine elevation mechanism taught by Green et al. with the stage taught by Zhang et al. because XY stages utilizing air bearings are typically used in testing apparatuses (column 2 lines 36-37).

Regarding claim 3, Zhang et al. does not teach that the reference base is formed of stone. Green et al. teaches a reference base formed of stone and a surface of the movable base, which is in contact with the reference base, is surface-plate finished (column 4 lines 2-3). It would have been obvious to one of ordinary skill in the art to use stone to form the reference base as taught by Green et al. in the stage of Zhang et al. because the base would be rigid and the system more accurate.

Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zhang et al. {5,726,073} in view of Kikuchi {6,370,787}.

Zhang et al. discloses the XY stage as described above but does not teach including a ball bearing having bearing balls between a fixed side member and a movable side member, in which the fixed side member is rigidly integrated with the movable member.

Kikuchi does teach a stage utilizing bearing balls in between a fixed side member and a movable side member, in which the fixed side member is rigidly integrated with the movable member (Fig 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the bearing balls as taught by Kikuchi with the device taught by Zhang et al. because that is a well known efficient way of moving frames in stage apparatuses.

Allowable Subject Matter

Claims 7, 9-11, and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 6510614 and 5427451 both disclose various types of XY stages.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tyrone Jackson

January 6, 2005



Michael Tokar
Supervisory Patent Examiner
Technology Center 2800